L 00575-67

ACC NR: AR6032066

was evaluated. In cases when high reliability, speed of response, and stability are required, it is recommended that a nonlinear feedback threshold element be used instead of a saturated threshold element. Orig. art. has: 18 illustrations, 1 table and a bibliography of 3 names. [Translation of abstract]

SUB CODE: 09/

Card 2/2

MISHIN, A. M.

Use of transistor diodes in the capacity of timing element links. Radiotekhnika 17 no.6:54-59 Je '62. (MIRA 15:6)
(Transistor circuits) (Pulse circuits)

L 6797-65 AFWL/ASD(a)-5/RAEM(c)/ESD(t)/RAEM(t) 42
ACCESSION NR: AP4043948 S/0108/64/019/008/0053/0058

AUTHOR: Mishin, A. M. (Active member)

TITLE: Nonlinear shaping by means of junction diodes

SOURCE: Radiotekhnika, v. 19, no. 8, 1964, 53-58

TOPIC TAGS: junction diode, semiconductor diode, signal shaping, signal limiting, nonlinear signal shaping

ABSTRACT: A junction-type with its near-perfect p-n junction is saturated at very low reverse voltages and has a current-voltage characteristic which permits using such a diode as a limiter with no d-c bias source required. The simple series circuit of the limiter differs from the conventional only in that it has no bias voltage source; the operation of such a circuit with DGTs-24 and D7 diodes is theoretically analysed. Eight modifications of the circuit designed to meet various conditions are suggested. While in vacuum-diode and point-contact-diode

Card 1/2

L 6797-65
ACCESSION NR: AP4043948

limiters the threshold roughly corresponds to the origin of coordinates, the threshold occurs in the author's circuit in the negative segment of the characteristic, the p-n-junction saturation current supplying the bias. The threshold can be adjusted by the value of the load resistance but only for one voltage polarity. Orig. art. has: 8 figures and 10 formulas.

ASSOCIATION: Nauchno-tekhnicheskoye obshchestvo radiotekhniki i elektrosvyasi (Scientific and Technical Society of Radio Engineering and Electrocommunication)

SUBMITTED: 27Jul62 ENCL: 00

SUB CODE: EC NO REF SOV: 005 OTHER: 000

Card 2/2

L 41113-65 EWP(1)/T/EWA(h) Pz-6/Peb IJP(c) AT
ACCESSION NR: AP4047814 S/0108/64/019/010/0056/0062

AUTHOR: Mishin, A. M. (Active member)

TITLE: Properties of limiters that use the saturation effect of a p-n junction

SOURCE: Radiotekhnika, v. 19, no. 10, 1964, 56-62

TOPIC TAGS: pn junction, semiconductor diode, semiconductor limiter, Ge diode

ABSTRACT: The inertial properties of junction-diode limiters are considered, and the possibility of frequency correction is established. A formula describing the conditions of a complete frequency correction is developed; in a series circuit of a unidirectional limiter, (a) the frequency characteristics can be improved by a proper selection of the ratio of the diode-internal capacitance to the correcting capacitance and (b) the correcting capacitance has a limit set by the ratio U_{lim}/U', where U_{lim} is the limited voltage and U' is the maximum stationary value of the output voltage. A "shape factor" of the output pulse depending on circuit

Card 1/2

L 41118-65
ACCESSION NR: AP4047814

parameters and mode of operation is suggested as a criterion of the output-voltage distortion. The junction-diode limiter stability is determined by the effect of ambient temperature on the reverse saturation current. Experimental verification involved DG-Ts and D-7 germanium diodes which, in the series circuit, showed positive shaping of sinusoidal signals up to 20 kc; in the parallel circuit, the ceiling frequency was 100 kc. Oscillograms and other experimental details are reported. "In conclusion, the author wishes to thank Engineer V. S. Kostenko for his help in the oscillograph work." Orig. art. has: 5 figures and 20 formulas.

ASSOCIATION: Nauchno-tekhnicheskoye obshchestvo radiotekhniki i elektrosvyazi (Scientific and Technical Society of Radio Engineering and Electrocommunication)

SUBMITTED: 27Jul62 ENCL: 00

SUB CODE: EC NO REF SOV: 008 OTHER: 000

Card 2/2

L 06114-67
ACC NR: AP6023860 SOURCE CODE: UR/0108/66/021/007/0060/0065

AUTHOR: Mishin, A. M. (Active member)

ORG: Scientific and Technical Society of Radio Engineering and Electrocommunication im. A. S. Popov (Nauchno-tekhnicheskoye obshchestvo radiotekhniki i elektrosvyazi)

TITLE: Discrete-noise-caused errors in measuring frequency by the phase method

SOURCE: Radiotekhnika, v. 21, no. 7, 1966, 60-65

TOPIC TAGS: frequency measurement, discrete noise, period meter

ABSTRACT: The operation of a digital period-meter (which serves for measuring instantaneous frequency of FM oscillations) in the presence of spurious periodic FM is mathematically analyzed. It is found that: (1) The maximum relative error due to a harmonic noise, in measuring frequency by the phase method, is: $\left|\frac{\delta\omega_c}{\omega_c}\right|_{max} = \left|\frac{\delta N_p}{N_p}\right|_{max} = \frac{K}{n\pi}$.

where $K = U_n/U_s$, U_n - noise voltage, U_s - signal voltage;

(2)The nature of error variation is determined by the law of variation of signal frequency, the discrete-measurement interval, and the averaging factor n; with $T_a > T$ (where T_a is the averaging interval, T is the frequency period), the error may vary and change sign from one measurement to another; if $T_a < T$, the law of error variation more or less follows the law of spurious FM. Orig. art. has: 3 figures and 25 formulas.

Card 1/1 SUB CODE: 09 / SUBM DATE: 01Feb65 / ORIG REF: 007 UDC: 621.317.029

MISHIN, A.N.

MASHEVICH, Z.K., inzhener; MISHIN, A.N., inzhener, retsenzent [deceased]; GINZBURG, N.Ya., inzhener, retsenzent; USATOV, G.A., inzhener, retsenzent; KORSAKOV, V.S., dotsent, kandidat tekhnicheskikh nauk, redaktor; MODEL', B.I., tekhnicheskiy redaktor.

[Technology of steam engine construction] Tekhnologiia lokomobile-stroeniia. Moskva, Gos.nauchno-tekhnicheskoe izd-vo mashinostroit. i sudostroit. lit-ry, 1953. 542 p. (MLRA 8:4)
(Steam engines--Construction)

MISHIN, A.N.

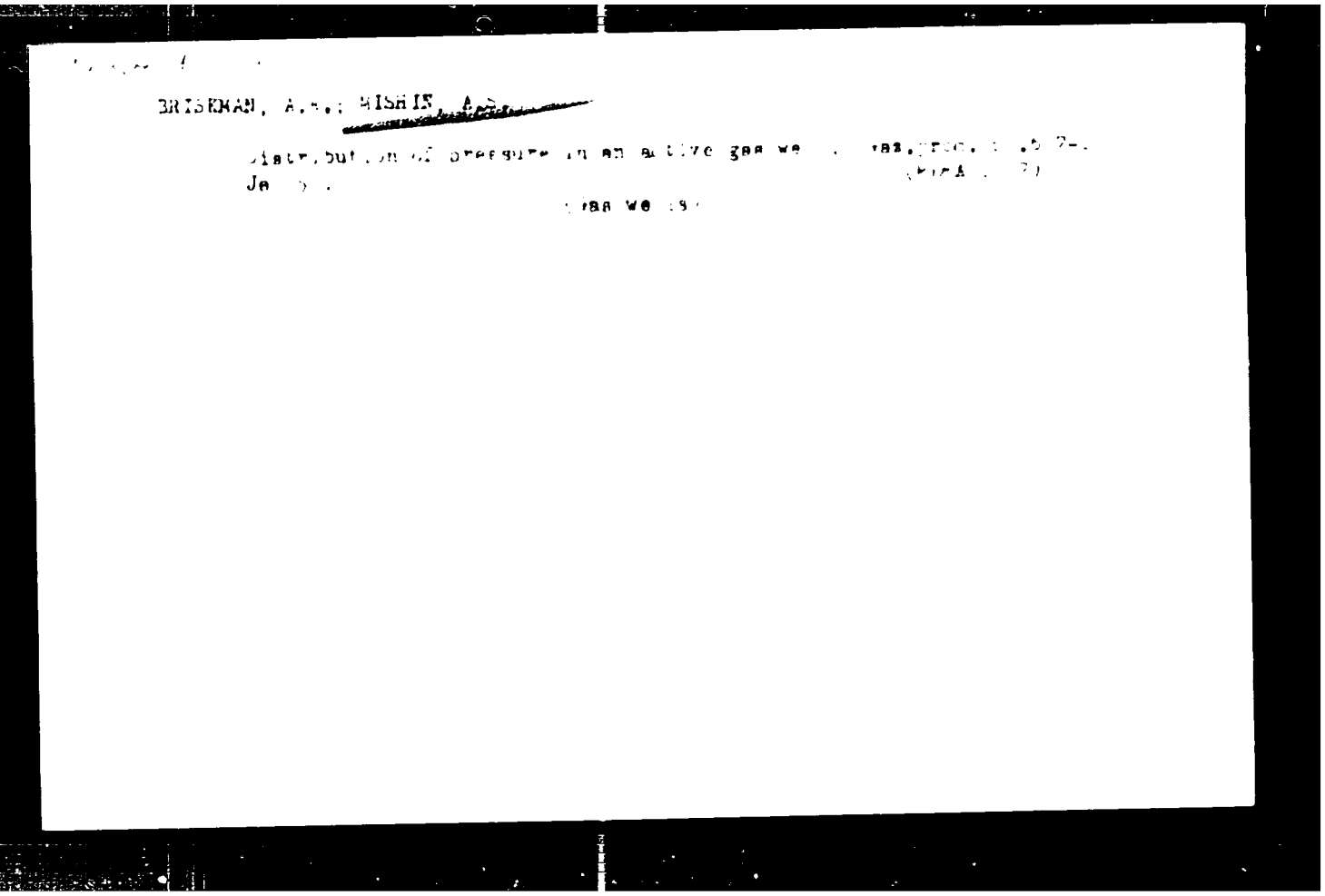
Organizing staff of auxiliary workers in machine plants. Trudy LIEI no.6:102-120 '53. (MLRA 9:8)
(Machinery industry) (Industrial management)

MISHIN, A.N., kandidat ekonomicheskikh nauk.

Regular flow of production and expert use of skilled workers. (MLRA 9:8)
Trudy LIEI no.10:72-79 '55.
(Industrial management)

MISHIN, A.S., inzh.

From the experience of the erection of step-down substations.
Energetik 10 no.10:23-24 O '62. (MIRA 15:12)
(Electric substations)



BRISKMAN, A.; NISHIS, A.

[redacted]

BRISKMAN, A.A.; IYKOV, N.M.; MISHIN, A.S.; NIKITINA, N...

Determining bottom pressure from well [illegible] of Tatar oil fields. [illegible]

Tatar A.S.S.R.--oil reservoir engineering

L 46313-66 EWT(m)/EWP(w)/T/EWP(t)/ETI IJP(c) JD

ACC NR: AR6013849 (A,N) SOURCE CODE: UR/0276/65/000/011/G016/G016

AUTHORS: Sal'nikov, V. P.; Lovtsov, D. P.; Botyanovskiy, M. G.; Misnin, A. S.; Solina, I. I.

TITLE: The influence of repeated melting and of batch composition on the properties of alloy AL-27-1 (AL8U)

SOURCE: Ref. zh. Tekhnologiya mashinostroyeniya, Abs. 11G130

REF SOURCE: Sb. Lit'ye i obrabotka splavov chorn. i tsvetn. met. Krasnoyarsk, 1965, 108-115

TOPIC TAGS: aluminum alloy, gas absorption, metal property / AL-27-1 aluminum alloy, AL8U aluminum alloy

ABSTRACT: The results of the conducted investigation have shown that refining with hexachloroethane produces more stable results than refining with manganese chloride. The process of repeated melting leads to the reduction in the difference [illegible]

Card 1/1 UDC: 621.745:669.715

L 02215-67 EWT(m)/EWP(w)/T/EWP(t)/ETI IJP(c) JD/JH
ACC NR: AR6022148 SOURCE CODE: UR/0276/66/000/002/G013/G013

AUTHOR: Krushenko, G. G.; Mishin, A. S.; Krushenko, L. I.

TITLE: Effect of natural aging and thermal treatment on the mechanical properties of aluminum-zinc alloys

SOURCE: Ref. zh. Tekhn mashinostr. Abs. 2G102

REF SOURCE: Sb. Liteyn metalloved. i obrabotka met davleniyem. Krasnoyarsk, 1965, 15-20

TOPIC TAGS: aluminum containing alloy, zinc containing alloy, natural aging, mechanical heat treatment, thermal treatment, mechanical property

ABSTRACT: Aluminum alloys containing 3% and 10% zinc were repeatedly overheated to 900 and 950C and cooled to 700 and 730C by mixing "hot" and "cold" portions of the alloy, slow air cooling, or by rapid cooling with a hard alloy of the same composition. The alloys were cast into flat ingots and aged for 3 years at room temperature. The effect of natural aging was most pronounced in the alloy containing 10% zinc. In the natural aging of this alloy, the tensile strength σ_b and HB increased while elongation decreased. In overheating to 900C the increase in

Card 1/2 UDC: 669.715

tensile strength after aging was higher than that following overheating to 650C. The alloy containing 3% zinc has a lower tensile strength and HB but higher elongation as compared with the alloy containing 10% zinc. The aging of alloy with 3% zinc leads to a decrease in tensile strength and an increase in HB and elongation δ. E. Kadaner. [Translation of abstract].

SUB CODE: 11/

Card 2/2 LC

EWT m EWP w (A, N) SOURCE CODE: UR/0276/65/000/011/G017/G017

ACC NR: AR6013855

AUTHORS: Krushenko, G. G.; Lovtsov, [illegible]; [illegible]skaya, F. Yu.; Mishin, A. S.

TITLE: Investigation of "temperature" [illegible] of alloy AL9

SOURCE: Ref. zh. Tekhnologiya mashin[illegible], Abs. 11G137

REF SOURCE: Sb. Lit'ye i obrabotka [illegible] tsvetn. met. Krasnoyarsk, 1965, 95-103

TOPIC TAGS: aluminum alloy, [illegible] Al-[illegible] aluminum alloy

ABSTRACT: [illegible] temperature [illegible] Al-[illegible] [illegible] sequent pouring. This results in increased yield strength and elongation. The metal delivery method for given casting configuration and other casting characteristics does not seem to significantly influence the mechanical properties. With increased pouring temperature, the time required to remove the overheat, i.e., until crystallization begins, increases. 4 tables. [Translation of abstract]

SUB CODE: 13, 11

UDC: 621.745:669.715

Card 1/1

SOV [illegible]

Translation from: Referativnyy zhurnal. Mekhanika. 1958, Nr [illegible] p [illegible] (USSR)

AUTHOR: Mishin, A. V.

TITLE: Contribution to the Design of Plane Flashboard Gates (K raschetu ploskikh rigel'nykh zatvorov)

PERIODICAL: Izv. Vses. n.-i. in-ta gidrotekhn. 1957, Vol 57, pp 198-200

ABSTRACT: A graph of the placement of equally loaded flashboards is provided
Reviewer's [illegible]

Card 1/1

MISHIN, A.V.

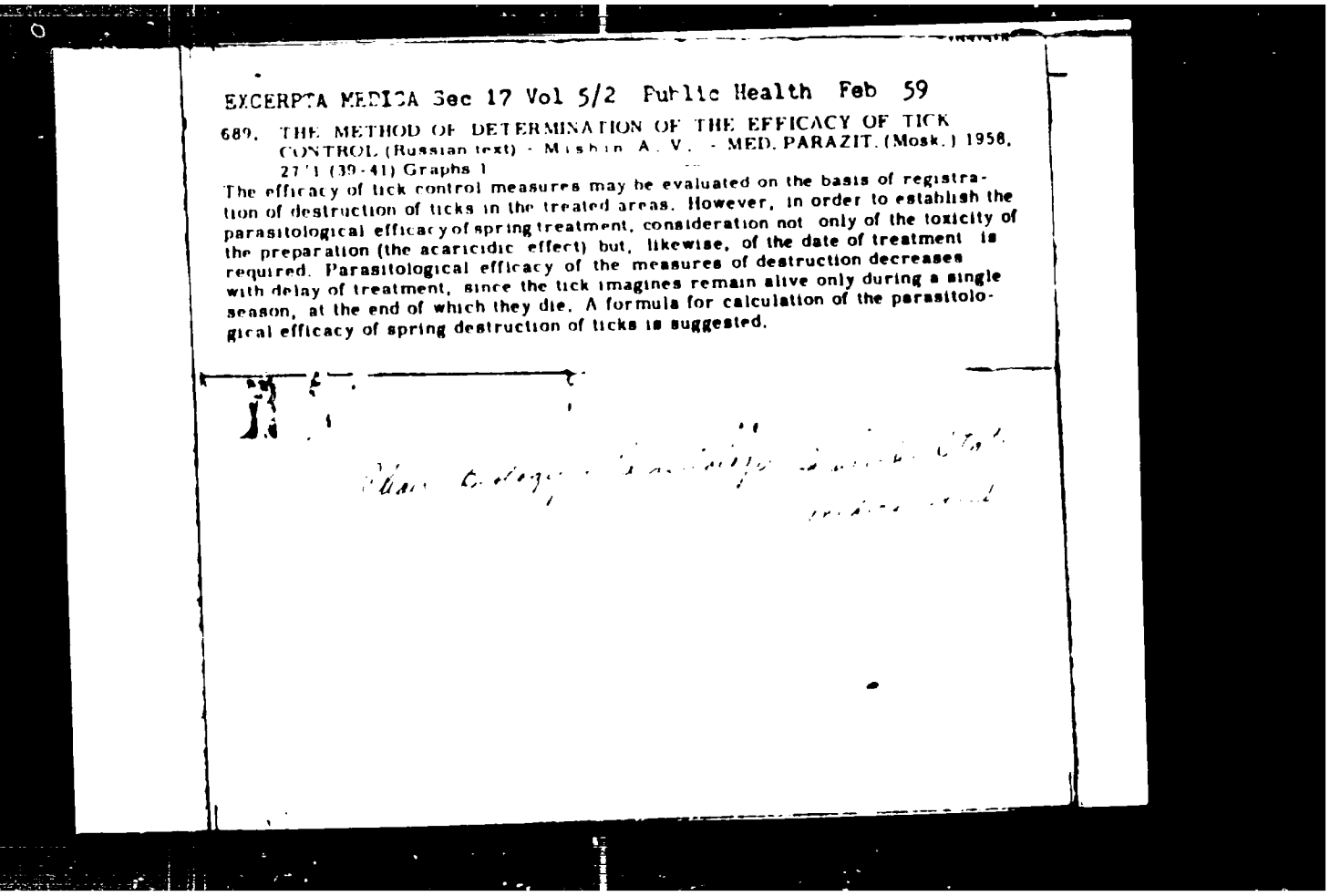
The effect of forestry measures on natural foci of tick-bone encephalitis. Med.paraz. i paraz.bol. 25 no.2:162-164 Ap-Je '56. (MLRA 9:8)

1. Iz Izhevskogo meditsinskogo instituta
(ENCEPHALITIS, transmission
ticks in forest clearing, prev. & control)
(TICKS
vectors in encephalitis in forest clearing, prev. & control)

MISHIN, A.V.

Methods of studying the aggressiveness of the tick Ixodes persulcatus [with English summary in insert] Zool.zhur. 35 no.7:978-985 Jl '56. (MLRA 9:9)

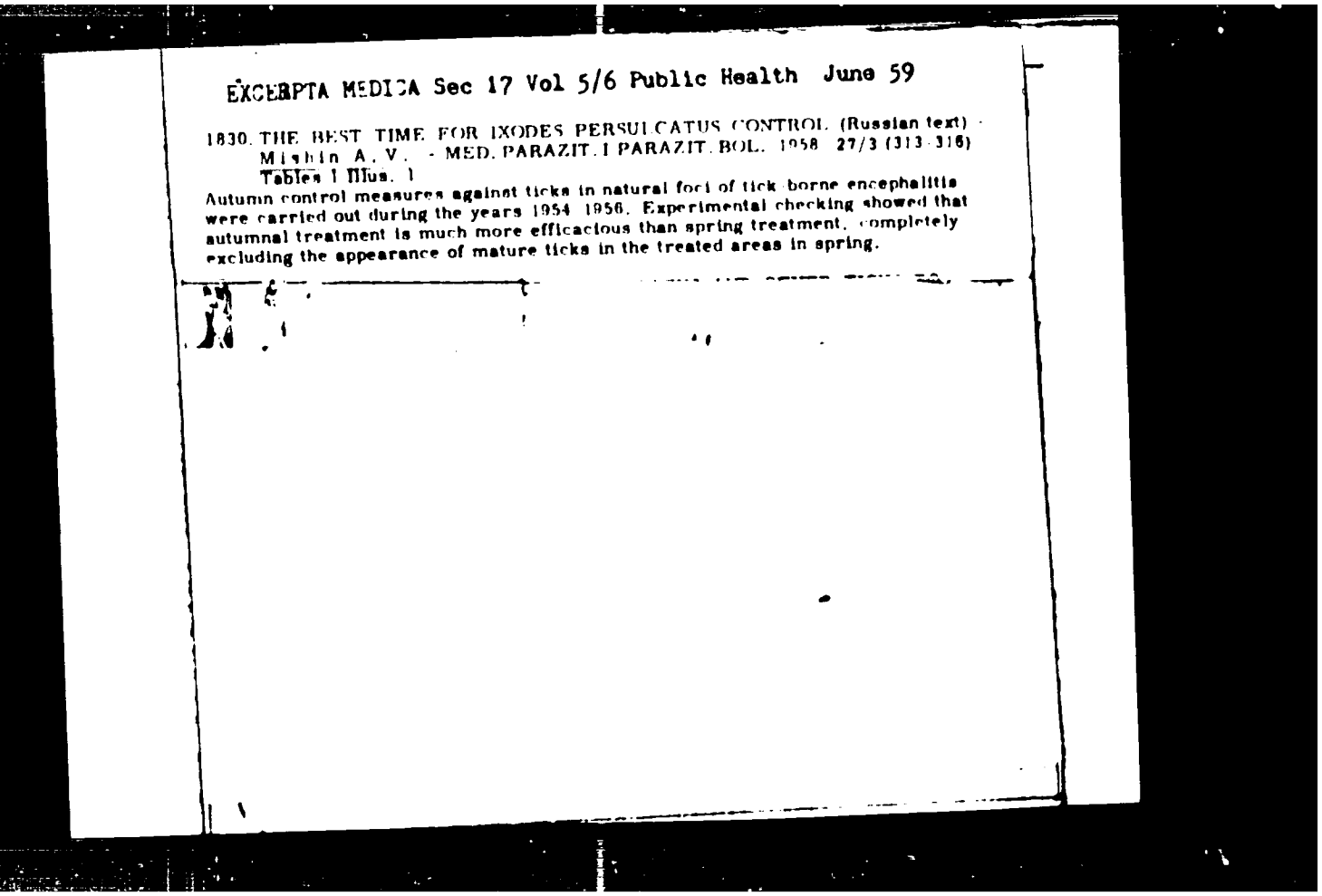
1.Izhevskiy meditsinskiy institut.
(Ticks)



EXCERPTA MEDICA Sec 17 Vol 5/2 Public Health Feb 59

689. THE METHOD OF DETERMINATION OF THE EFFICACY OF TICK CONTROL (Russian text) - Mishin A. V. - MED. PARAZIT. (Mosk.) 1958, 27/1 (39-41) Graphs 1

The efficacy of tick control measures may be evaluated on the basis of registration of destruction of ticks in the treated areas. However, in order to establish the parasitological efficacy of spring treatment, consideration not only of the toxicity of the preparation (the acaricidic effect) but, likewise, of the date of treatment is required. Parasitological efficacy of the measures of destruction decreases with delay of treatment, since the tick imagines remain alive only during a single season, at the end of which they die. A formula for calculation of the parasitological efficacy of spring destruction of ticks is suggested.



EXCERPTA MEDICA Sec 17 Vol 5/6 Public Health June 59

1830. THE BEST TIME FOR IXODES PERSULCATUS CONTROL. (Russian text)
Mishin A. V. - MED. PARAZIT. I PARAZIT. BOL. 1958 27/3 (313-316)
Tables 1 Illus. 1

Autumn control measures against ticks in natural foci of tick borne encephalitis were carried out during the years 1954 1956. Experimental checking showed that autumnal treatment is much more efficacious than spring treatment, completely excluding the appearance of mature ticks in the treated areas in spring.

MISHIN, A.V.

Experience in determining the rhythm of viral intensity in natural foci of diphasic meningoencephalitis. Zhur. mikrobiol. epid. i immun. 29 no.8: 72-75 Ag '58. (MIRA 11:10)

1. Iz Instituta eksperimental'noy meditsiny AMN SSSR i kafedry biologii Izhevskogo meditsinskogo instituta.

(MENINGOENCEPHALITIS, epidemiology,
in Russia, rhythms of viral intensity in natural foci (Rus))

AUTHOR: Mishin, A. V.

TITLE: "otor Reactions in Ixodes persulcatus P. Sch., as Affected by Phytoncides (Vliyaniye fitontsidov na dvigatel'nyye reaktsii kleshcha Ixodes persulcatus P. Sch.)

PERIODICAL: Doklady Akademii nauk SSSR, 1956, Vol. 120, Nr 1, pp. 911 - 913 (USSR)

ABSTRACT: The effect of the phytoncides on multicellular animals is by no means sufficiently investigated. As is known the difficulty of killing animals such as Ixodes ricinus or I.persulcatus is not due to the lack of efficient acaricides but to the complicated combat of their natural breeding centers which usually comprise rather extensive areas. The capability of producing volatile phytoncides is (according to B.P.Tokin, a wide spread phenomenon. Phytoncides are extremely toxic even for so highly organized animals as the arthropoda. Therefore it can be supposed that organisms which in consequence of their ecolog. properties have to live near phytoncides have in the course of evolution assumed a differentiated reaction towards those toxins as is known many important characteristic features of epidemiology of tickencephalitis are determined by the physiolog. state of the

Card 1/3

Motor Reactions in Ixodes persulcatus P. Sch., as Affected by Phytoncides

tick. They are connected with the behaviour of the tick as well as with the conditions of reproduction of the morbific agent in the organism of the tick. Experiments were carried out with the following plants: Evonymus verrucosus, Tilia parvifolia, Urtica dioica, Dryopteris filixmas, Lonicera, Anemone nemorosa, Chelidonium majus, Taraxacum officinale, Orobus vernus, Caragana arborescens, Picea excelsa, Ranunculus acer, Syringa vulgaris, Fraxinus excelsior, Aegopodium podagraria, Betula pubescens, Amelanchier vulgaris, Allium cepa and sativum, Sambucus sibirica, Abies sibirica, Juniperus communis, Citrus limonium, Populus tremula. In all cases leaves were tested, in the case of Picea and Abies the needles, in the case of Allium the bulb and in the case of lemon peel and fruit. The amount of phytoncides of individual plants are collected on table 1. Figure 1 shows their spectrum under the exclusion of Caragana, Syringa, Fraxinus and Amelanchier, the two bulbous plants and the lemon peel which do not occur in tick biotopes. On a single phytoncide male and female ticks sometimes react very differently. Caragana females react positively, the males negatively. In the case of Aegopodium, Amelanchier and Syringa conditions are reversed

Card 2/3 Dimethylphthalate - a well known deterrent of [illegible] a repulsive

Motor Reactions in Ixodes persulcatus P. Sch., as SOV/20-122-2-[illegible]
Affected by Phytoncides

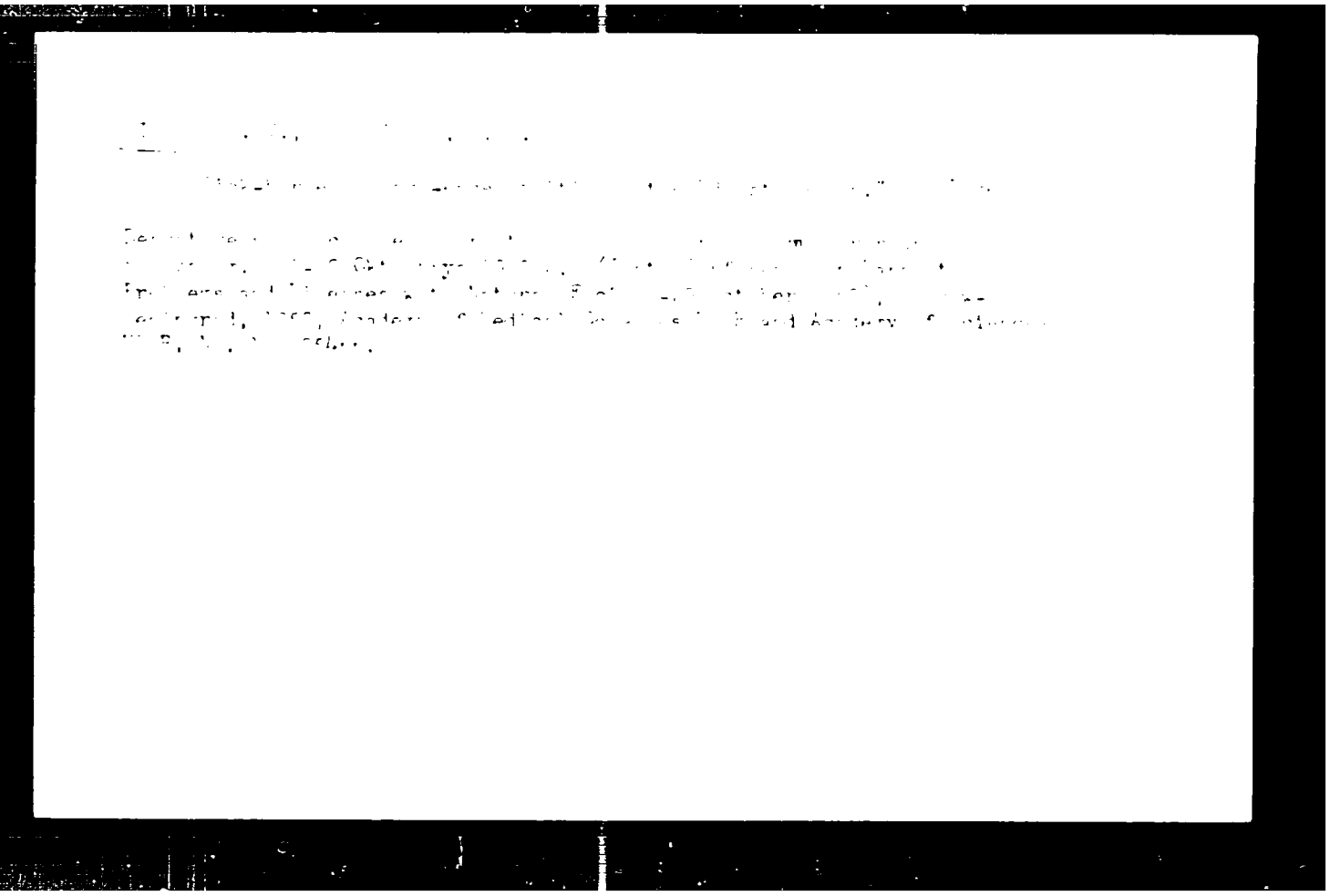
effect. The knowledge of the scale of the preference of the ticks of phytoncides (fitopreferenduma) is also of practical importance in connection with the investigation of the natural breeding centers of ticks. There are 2 figures, 1 table, and 2 references, 2 of which are Soviet.

PRESENTED: February 12, 1958, by Ye. N.Pavlovskiy, Member, Academy of Sciences, USSR

SUBMITTED: November 9, 1957

1. Ixodes--Physiology 2. Ixodes--Ecology 3. Herbicides--Physiological effects 4. Motor reactions 5. Acquired immunity 6. Plants--[illegible] properties

Card 3/3



MISHIN, A. V.

"A Method of Inspecting Woods for Ticks."

Tenth Conference on Parasitological Problems and Diseases with Natural Reservoirs, 22-29 October 1959, Vol. II, Publishing House of Academy of Sciences, USSR, Moscow-Leningrad, 1959.

Izhevsk Medical Institute

MISHIN, A.V.; GERASIMOVA, Ye.N.

Epidemiological characteristics of tick-borne encephalitis in the Udmurt Autonomous Soviet Republic. Med.paraz. i paraz. bol. 28 no.2:137-142 Mr-Ap '59. (MIRA 12:6)

1. Iz Izhevskogo meditsinskogo instituta.
(ENCEPHALITIS, EPIDEMIC, epidemiol.
tick-borne, in USSR (Rus))

MISHIN, A.V.

Studies of the effect of benzo-chloran on immature satiates Ixodes persulcatus P. Sch. Med.parazi. i paraz.bol. 28 no.3:321-323 My-Je '59. (MIRA 12:9)

1. Iz kafedry biologii i parazitologii Izhevskogo meditsinskogo instituta (zav. kafedroy A.V.Mishin) i Respublikanskoy sanitarno-epidemiologicheskoy stantsii Udmurtskoy ASSR (glavnyy vrach N.P.Baryshnikov).

(TICKS, eff. of drugs on, benzene hexachloride on Ixodes persulcatus (Rus))
(BENZENE HEXACHLORIDE, eff. on Oxides persulcatus (Rus))

MISHIN, A.V.

Problem of winter and spring control of forest ticks (under the snow). Med. paraz. i paraz.bol. 28 no.6:682-684 N-D '59.
(MIRA 13:12)

(TICKS)

MISHIN, Aleksandr Vasil'yevich; MISHINA, Yu.S., red.; BELOVSKAYA, N.A., tekhn. red.

[Beef tapeworm, a parasite in man] Bychii tsepen' - parazit cheloveka. Moskva, Medgiz, 1962. 22 p. (MIRA 16:12)
(TAPEWORMS)

SHIROKOV, N.N.; KIM, L.V.; ROMANOV, S.V.; VELITNITSKIY, A.I.; MISHIN, A.Ye.

Improving operations of concrete mixing units at the reinforced concrete products plant. Suggested by N.N.Shirokov and others. Rats.i izobr.predl.v stroi. no.11:17-19 '59. (MIRA 13:3)

(Mixing machinery) (Reinforced concrete)

MISHIN, B.A.

X-ray camera for the study of the texture of a thin surface layer of a plane test piece. Zav. lab. 24 no.5:642 '58. (MIRA 11:6)

1. Voronezhskiy pedagogicheskiy institut.
(Metals—Testing) (X-rays—Equipment and supplies)

MISHIN, B. A., CAND PHYS-MATH SCI, LAMINAR X-RAY ~~SELF-~~ examination
~~FRACTION INVESTIGATION~~ OF THE TEXTURE OF FINELY ROLLED ALUMINUM. LENINGRAD, 1960. (MIN OF ED RSFSR. LENINGRAD STATE PED INST IM A. I. GERTSEN, CHAIR OF GEN PHYS).
(KL, 2-61, 199).

S/126/61/011/004/012/023
E021/E435

AUTHOR: Mishin, B.A.

TITLE: X-Ray Study of the Change in Texture of Layers of Thin Cold Rolled Aluminium

PERIODICAL: Fizika metallov i metallovedeniye 1961, Vol.11, No.4, pp.575-587

TEXT: A systematic study of the change in texture of thin cold rolled aluminium in relation to depth has been carried out by examining layers at different depths. Pure aluminium (containing 0.08% Fe, 0.003% Cu and 0.08% Si) was used. Three degrees of reduction (90, 96 and 98.5%) were tried. The texture was investigated from the (024), (113), (222), (133) and (220) pole figures. In the 1 mm strip (90% reduction) the texture was quite clear, but the changes from layer to layer followed no definite law. Changes of texture were observed in different parts of the same layer. In the samples of 0.4 and 0.15 mm strip (96 and 98.5% reduction) the texture was very clear and was characterized by constant and variable orientations. The constant orientations were practically the same in all the layers of the samples, and the variable orientations depended on the distance of the layer from the surface

X-Ray Study of ...

of the sample. The texture of foil 80 microns thick, obtained by very high degrees of reduction, was completely the same in all layers. The constant orientations for all the layers of the samples 0.4 and 0.15 mm thick covered the range $(\bar{3}\bar{3}\,13\,13)[11\,14\,14]$ to $(22\,11\,7)[558]$. The $(\bar{3}\bar{3}\,13\,13)[11\,14\,14]$ orientation is close to the $(112)[111]$ orientation, the $[111]$ axis being displaced relative to the direction of rolling by 5 to 6°. The direction of rolling lay in the plane of the rhombic dodecahedron and was between $[111]$ and $[122]$. This result did not agree with that of G.S.Zhdanov (Ref.21) who found that the direction of rolling was between $[111]$ and $[112]$. In the outer layers of the samples, the $(\bar{5}31)[335]$ orientation was found and the $(\bar{1}10)[112]$ was absent. In the central layers the $(\bar{1}10)[112]$ orientation was present and the $(\bar{5}31)[335]$ absent. The degree of preferred orientation of the surface layers was less than that of the internal layers in the case of the 0.4 and the 0.15 mm strip, but in the 80 micron foil it was the same across the whole section. The non-uniformity of texture of the samples may, in some cases, be one of the reasons for the disagreements in the results of studies of this aluminium strip carried out by different workers. There are 9 figures and

S/126/61/011/004/012/023
E021/E435

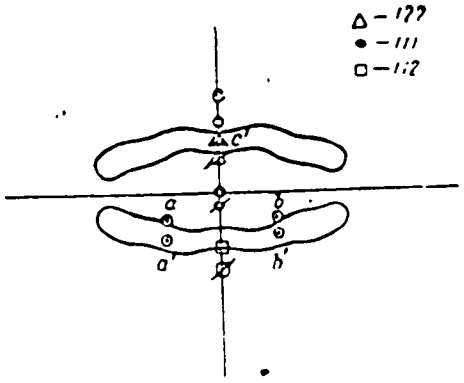
X-Ray Study of ...

24 references: 9 Soviet and 15 non-Soviet.

ASSOCIATION: Voronezhskiy pedagogicheskiy institut
(Voronezh Pedagogical Institute)

SUBMITTED: July 15, 1960

Fig.1. Central part of the (133) pole figure.



Card 3/7

OLENEV, Nikolay Mikhaylovich; MISHIN, Boris Vasil'yevich; KHRENOV, L.K., redaktor; PERMINOV, S.V., vedushchiy redaktor; YASHCHURZHINSKAYA, A.B., tekhnicheskiy redaktor.

[Nonmetal reservoirs for storing petroleum and petroluem products] Nemetallicheskie rezervuary dlia khraneniia nefti i nefteproduktov. Leningrad, Gos.naucho-tekhn.izd-vo neft.i gorno-toplivnoi lit-ry, Leningr.otd-nie, 1957. 383 p. (MLRA 10:11)
(Petroleum--Storage) (Petroleum products--Storage)

TITKOV, V.I.; BELINSKIY, M.L.; BUNCHUK, V.A.; BUT, P.P.; VINOGRADOV, A.F.; KOFMAN, S.R.; KUKUSHKINA, R.N.; MATSKIN, L.A.; MOSKAL'KOV, I.I.; MISHIN, B.V.; NADEZHDIN, M.D.; OLENEV, N.M.; ROZEN, S.N.; NOVIKOVA, vedushchiy red.; TROFIMOV, A.V., tekhn.red.

[Handbook on oil tank equipment] Spravochnik po oborudovaniiu neftebaz. Moskva, Gos.nauchno-tekhn.izd-vo neft. i gorno-toplivnoi lit-ry, 1959. 463 p. (MIRA 12:12)
(Petroleum--Storage)

SHUR, D. D.

Nov/Dec 52

USSR/Physics - Ferromagnetics

"Effect of Small Elastic Tensions on Initial Susceptibility of Ferromagnetics," Ya. S. Shur, D. D. Mishin, Inst of Phys of Metals, Ural Affiliate, Acad Sci USSR

Iz Ak Nauk SSSR, Ser Fiz, Vol 16, No 6, pp 634-639

Attempts to obtain experimentally detailed data showing dependence of magnetic properties in weak fields on elastic tensions. Results agree with Vonsovskiy's theory (ZhETF, 17, (1947); Ferromagnetism, 1948).

251T28

Electrical Engineering Abst.
Vol. 57 No. 675
Mar. 1954
Electrical Engineering

621.318.1 : 538.221

1048 **Influence of small elastic strains in the initial susceptibility of some ferromagnetic substances.** Ya. S. Shur and D. D. Misiuk. *Dokl. Akad. Nauk SSSR.* 87, No. 4, 543–7 (1952) *In Russian*

Gives experimental curves for iron, nickel, 66-permalloy, 1% Si steel and two forms of transformer alloy steel loads up to about 4 kg/mm².

J. M. HOUGHTON

2 pkp

3/14/54 p

MISHIN, D. D., (Sverdlovsk)

"Thermomagnetic treatment of Silicon Iron Steel," a paper submitted at the International Conference on Physics of Magnetic Phenomena, Sverdlovsk, 23-31 May 56.

Mishin, D.D.

18673* (Russian.) The Influence of the Cooling Rate in Thermomagnetic Treatment on the Magnetic Properties of Cold-Rolled Transformer Steel. Vliianie skorosti okhlazhdeniia pri termomagnitnoi obrabotke na magnitnye svoistva kholodnokatanoi transformatornoi stali. D. D. Mishin and M. M. Belenkova. *Fizika Metallov i Metallovedenie*, v. 2, no. 2, 1956, p. 370-374.

Determines the dependence of changes in the magnetization curve, magnetostriction, and coercive force on the cooling rate. The lower the rate, the stronger its effect. The effect of the thermomagnetic treatment is anisotropic.

MISHIN, D.D.

1-4E2c

The Initial Susceptibility and the ΔE-Effect in Magnetically Soft Ferromagnetics. D. D. Mishin and I. E. Kudryavtsev (Fizika Metallov i Metallovedenie, 1956, 2, (3), 439–443).—[In Russian]. The ΔE-effect (dependence of Young's modulus of a ferromagnetic on the applied stress) and initial susceptibility (χ_i) were measured for annealed polycrystals of Ni and for specimens of transformer steel with highly preferred orientation. In agreement with theory, $\chi_i \propto \Delta E$. The pseudo single crystals of transformer steel showed an anisotropy of ΔE, the largest effect being ∥ the rolling direction, the smallest ⊥ the rolling direction.—A. F. B.

URAL STATE UNIV. im. A. M. Gor'kii

RG

8335

S/139/60/000/004/013/033
E032/E514

9.2571 1144

AUTHORS Mishin, D D and Drobchenko L D.

TITLE Temperature Dependence of Magnetostriction Properties of Ni-Zn Ferrites

PERIODICAL Izvestiya vysshikh uchebnykh zavedeniy Fizika 1960 No 4 pp 131 134

TEXT The temperature dependence of magnetic properties of the following specimens was investigated Fe_2O_3 - 66 6% ZnO - 9 7% NiO - 19.7% CuO - 4% and Fe_2O_3 - 66% ZnO - 22% NiO - 12% These two materials have the code numbers F-100 and F 600 respectively. The specimen dimensions were diameter 2 7 mm length 120 mm. A magnetometric method was used to determine the temperature dependence of the susceptibility in the weak field region the magnetization curve and the coercive force in the temperature region between 196 and +150°C It was found that the magnetic susceptibility of the above ferrite specimens for fields between 10^{-2} Oe and 2/3 of the coercive force is independent of the magnetizing field i e the magnetic susceptibility of the ferrites is due to reversible magnetization processes in this field region

Card 1/2

S/139/60/000/004/013/037
E032/E514

Temperature Dependence of Magnetostriction Properties of Ni-Zn Ferrites

The coercive force decreases monotonically with increasing temperature (Fig 4). The initial permeability $\mu_a(T)$ is said to be inconsistent with the formula $\mu_a(T) = CI_s^2(T)/k(T)$ (the symbols are not defined). The effect of temperature on the magnetization curve and the coercive force for Ni-Zn ferrites is qualitatively similar to the case of most of the metallic magnetically-soft ferromagnetics. There are 5 figures and 7 references all Soviet

ASSOCIATION Ural skiy gosuniversitet imeni A M Gor kogo (Ural State University imeni A M Gor kiy)

SUBMITTED May 27 1959

Card 2/2

S/126/60/009/02/005/0..
E073/E355

AUTHORS: Mishin, D.D and Matantseva

TITLE: Influence of the Shape of Ferromagnetic Bodies ... Coercive Force After Annealing of the Material of which These Bodies are Made

PERIODICAL: Fizika metallov i metallovedeniye. 1960. Vol ... Nr ... pp 184 - 186 (USSR)

ABSTRACT: In earlier work of one of the authors (Refs 1,2) it was found that, after heating above the Curie point, the magnetic properties of ferromagnetic specimens may depend considerably on their shape. This can be explained by the influence of the shape of ferromagnetic bodies on their domain structure. In the study of one of the aspects of this problem the authors compared specimens of various dimensions which were electrolytically etched from adjacent parts of a single sheet of magnetically soft material. In the experiments sheets of electrical steels of thicknesses of 0.35 and 0.1 mm were used. The specimens were heated in an inert medium up to 800 °C, held at ... at temperature for 15 min, then cooled in the furnace down to 400 °C with an average speed of 150 °C/h. During

Card1/3

S/126/60/009/02-/0[illegible]/022
E073/E335

Influence of the Shape of Ferromagnetic Bodies on the Coercive Force After Annealing of the Material of Which These Bodies are Made

heating and cooling conditions were created which excluded thermomagnetic and thermomechanical treatment of the annealed specimens. For measuring the coercive force in specimens with various shapes during annealing specimens of equal shape of 50 x 6 x 0.1 to 50 x 6 x 0.55 mm were electrolytically etched out. The results of the measurements are entered in the table p 185, other results were comparable. It was found that the coercive force of specimens from the same material differs with the shape of the specimen. The magnitude of this difference depends on the grade of steel and for cold-rolled steel it also depends on the crystalline orientation of the specimen. The greatest difference was found in cold-rolled steel in the direction of rolling. Since the coercive force is closely related with other magnetic characteristics it is reasonable to assume that the shape will influence also other characteristics, for instance,

Card 2/3

S/120/60/009/0-/0[illegible]/[illegible]
E073/E[illegible]

Influence of the Shape of Ferromagnetic Bodies on the Coercive Force After Annealing of the Material of Which These B[illegible]

the permeability. It is stated that it is rational to carry out heat treatment of materials used for magnetic circuits under conditions of an as closed a magnetic circuit as is practicable to ensure the maximum attainable magnetic flux per unit of weight of the magnetic material There are 1 table and 3 Soviet references.

ASSOCIATION: Ural'skiy gosudarstvennyy universitet (Ural State University)

SUBMITTED: May 9, 1959, initially
July 15, 1959, after revision

Card 3/3

22907

24.2200

S/109/61/006/004/022/025
E140/E163

AUTHORS: Mishin, D.D., and Kalyagina, L.A.

TITLE: The influence of temperature prehistory on the permeability of nickel-zinc ferrites

PERIODICAL: Radiotekhnika i elektronika, Vol.6, No.4, 1961, pp. 667-669

TEXT: Previous workers (Refs. 1, 2) have investigated the so-called temperature-magnetic hysteresis of metallic ferromagnetic materials in weak and medium fields. It has been found that the temperature-magnetic hysteresis is a fairly complex phenomenon, depending on the number of temperature cycles, magnetic field applied, etc. etc. The present authors' measurements show that as the number of cycles increases the material stabilizes. The effect is explained by temperature hysteresis of the domain structure of the material, which changes irreversibly during the temperature cycle. The changes in question can be either or both of domain boundary shifts and rearrangement of the ferrite domain structure.

There are 2 figures, 1 table and 5 Soviet references.

SUBMITTED: August 22, 1960

Card 1/1

S/048/61/[illegible]
B117/B104

AUTHORS: Mishin, D. D., Bychkova, T. I., and Smagin, V. A.

TITLE: Effect of magnetic field strength on the magnetic properties of cold-rolled electrotechnical steel in thermomagnetic treatment

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. no. 12, 1961, 1498 - 1502

TEXT: The effect of the magnetic field strength on the magnetization curve and on the hysteresis loop of cold-rolled crystallographically textured electrotechnical steel of the type [illegible] (E310) was investigated. Ring-shaped samples 7 cm in diameter were used. They were produced from strips ([illegible] cm) annealed for 5 hr at 1100°C in hydrogen. The strips of the samples were welled together. The strips were cut out tangentially and transversely, and at an angle of 55° to the rolling direction. Thus, it was possible to investigate the magnetic properties in the tetragonal, hexagonal, and trigonal direction of the iron pseudomonocrystal [illegible]

Card 1/4

Effect of magnetic field strength ...

... on the basis of a distinctly crystallographic texture. Thermomagnetic treatment was conducted on a special device with ... created uniform heating in holding and cooling of samples in the ... field area. Conditions for thermomagnetic treatment: heating at ... rate time 1 minutes, cooling to 7 °C within 1 hour, ... cooling at a rate of 7° degrees hr^{-1} to 500°C, and cooling ... switched-off furnace. The magnetic field with a frequency of ... switched at 7 °C during the holding time, and switched off at ... Various field strengths in the individual treatments were ... oersteds. Prior to measurements, the samples were ... subjected to an alternating field of 50 cps with an amplitude decreasing gradually to zero. Magnetization curve and hysteresis loop were measured by the ballistic method. The following was found: In fields of ... oersteds, hysteresis loop of tetragonal samples after the treatment mentioned above becomes the narrower and the more rectangular, the ... the magnetic field strength was during treatment. Hysteresis ... practically remains unchanged when the field is altered during treatment to ... oersteds. In trigonal and trigonal samples, hysteresis ...

Card 4/4

Effect of magnetic field strength ...

treatment are considerably changed in the field of 70 oersteds, and the rectangular shape increases very much. Increase of magnetic induction ΔB caused by the treatment takes place in weak and medium fields. $\Delta B(H)$ curves show a maximum in the range of maximum permeability. This increase in induction grows in tetragonal samples with an increase of magnetic field strength during treatment from 0.07 to 7 oersteds. If the field increases from 7 to 70 oersteds, however, the effect of treatment is changed only slightly. Magnetic induction decreases in the range of fields from 1 - 1.5 oersteds after TMB (i. e., $\Delta B<0$). The magnetic characteristic most suspectible to the treatment is maximum permeability which increases considerably in all types of samples. The remanence of ligonal and trigonal samples decreases considerably and that of tetragonal samples only slightly. Since permeability increases considerably by treatment of cold-rolled electrotechnical steel in weak and medium fields, this treatment can be successfully applied to electrotechnical parts for which the characteristics of operation are determined by the permeability of magnetic conductors in weak and medium fields. There are 6 figures, 1 table, and 11 references: 5 Soviet and 6 non-Soviet. The

Card 3/4

Effect of magnetic field strength ... S/048/61/025/012/01[illegible]
B117/B104

four references to English-language publications read as follows:
Fiedler, H., Pry, R., J. Appl. Phys., Suppl., 30, 109 (1959); Heidenreich, R., Nesbitt, E., Berbank, J. Appl. Phys., 30, no. 7, 955 (1959); Gertz M., J. Appl. Phys., 22, no. 7, 984 (1951); Bozorth R., J. Appl. Phys., 8, 575 (1947).

Card 4/4

MISHIN, D.D.; KORZUNIN, G.S.

Effect of heat treatment on the magnetic properties of a magnetic circuit. Fiz. met. i metalloved. 14 no.1:126-128 Jl '62. (MIRA 15:7)

1. Ural'skiy gosudarstvennyy universitet imeni A.M. Gor'kogo. (Magnetic circuits) (Thermomagnetism)

MISHIN, D.D.; GOGIN, V.P.

Effect of the initial state on the result of thermomagnetic treatment of a permalloy. Izv.vys.ucheb.zav.; fiz. no.3:12-14 '63. (MIRA 16:12)

1. Ural'skiy gosudarstvennyy universitet imeni A.M.Gor'kogo.

L 62916-65 EWT(m)/EWP(w)/EWA(d)/T/EWP(t)/EWP(z)/EWP(b) MJW/JD

ACCESSION NR: AR5019142 UR/0137/65/000/007/I029/I029

35
B

SOURCE: Ref. zh. Metallurgiya, Abs. 7I187

AUTHOR: Mishin, D. D.

TITLE: Effect of temperature gradients on the kinetics of the heat treating process and the magnetic permeability of 79NM permalloy

CITED SOURCE: Sb. Fiz. magnitn. yavleniy. Sverdlovsk, 1964, 107-108

TOPIC TAGS: permalloy, magnetic permeability, metal heat treatment, temperature distribution, electric resistance/79NM permalloy

TRANSLATION: A study was made of the effect of temperature gradients on electrical resistance R and magnetic permeability μ of permalloy 400Kh5Kh. R was measured by a potentiometric method, and μ by a ballistic method. The temperature gradients were set up by heating the samples in vacuum furnaces at different heating rates. The measurements of R showed that the annealing process

Card 1/2

L 62916-65

ACCESSION NR: AR5019142

basically proceeds only during the period of heating, when there are temperature gradients in the sample. The effect of the holding time on μ is explained by the duration of the preheating time for multilayer toroidal samples. For large temperature gradients, the value of μ attains the same large values as for small temperature gradients. The rate of heat treatment increases with an increase of the temperature gradients in the sample. The value of μ is uniquely determined by the course of R: the smaller the increment in R during the heat treatment process, the larger the maximum value of μ. (From RZh Fiz.)

SUB CODE: MM ENCL: 00

Card 2/2

L 62915-65 EWT(m)/EWP(w)/EWA(d)/T/EWP(t)/EWP(z)/EWP(b) MJW/JD

ACCESSION NR: AR5019141 UR/0137/65/000/007/I029/I029

SOURCE: Ref. zh. Metallurgiya, Abs. 7I186

AUTHOR: Mishin, D. D.; Khrabrov, V. A.

TITLE: Study of the temperature stabilization of the magnetic permeability of 79NM permalloy

CITED SOURCE: Sb. Fiz. magnitn. yavleniy. Sverdlovsk, 1964, 109-111

TOPIC TAGS: permalloy, magnetic permeability, temperature control, electric resistance, metal aging/79NM permalloy

TRANSLATION: A study was made of the effect of aging on the electrical resistance R_T and the diffusional magnetic permeability μ_{dif} of toroidal samples made from strips of 79NM permalloy with a thickness of 0.008cm. The samples were subjected to different heat treatments: heating for 3 min to 800C, to 1000C and to 1100C, and heating for 120 min to 1100C. The holding time during aging was 60 min, and cooling was done at a rate of 200 degrees/hour. R_T was measur-

Card 1/2

L 62915-65

ACCESSION NR: AR5010141

ed at 445C, and μ_{dif} in the temperature region from 100-300C in an argon atmosphere. It was established that $\Delta R/R_T$ increases as a function of the holding time during aging. It was shown that the highest temperatures for the stabilization of μ_{dif} is exhibited by the sample heated for 3 min to 800C, for which $\Delta R/R_T$ has the largest value. It was established that there exists a determined relationship between the course of R_T during the aging process and the temperature stabilization μ_{dif} of a permalloy. (From RZh Fiz.)

SUB CODE: MM ENCL: 00

Card 2/2

L 62944-65 EWT(m)/EWP(w)/EWA(d)/T/EWP(t)/EWP(z)/EWP(b) JD
ACCESSION NR: AR5010143 UR/0137/65/000/007/I029/I020

38
B

SOURCE: Ref. zh. Metallurgiya, Abs. 7I188

AUTHOR: Mishin, D. D.; Petrova, N. A.

TITLE: Temperature dependence of the magnetic properties of 79NM permalloy

CITED SOURCE: Sb. Fiz. magnitn. yavleniy. Sverdlovsk, 1964, 118-120

TOPIC TAGS: permalloy, magnetic permeability, metal heat treatment, metal aging, temperature dependence, magnetic saturation, magnetic induction, magnetic property/79NM permalloy

TRANSLATION: A study was made of the effect of temperature t on magnetic permeability μ, saturation induction B_s, the residual induction B_r, and H_c forhigh permeability 79NM permalloy. Toroidal samples were first subjected to a high temperature heat treatment in a vacuum at 1100C with subsequent cooling at a rate of 180 degrees/hour to 600C, and further cooling together with the furnace. Low

Card 1/2

L 62944-65
ACCESSION NR: AR5019143

temperature heat treatment (aging) was carried out in argon at 445C for 10 hours. It was established that, after the first heat treatment, μ depends sharply on t and has a maximum in the region of 100C. After aging, the temperature dependence of μ in the region 150-300C is stronger, while in the region from -196 to +100C it is weaker. After aging, B_g increases and changes its temperature path, particularly in the low temperature region. (From RZh. Fiz)

SUB CODE: MM ENCL: 00

Card 2/2

BABAKHANOV R.A., MISHIYEV, D.Ye.; GAYDAROVA, E.E., SAMEDOVA, T.

Alkylation of cresols with olefins. Azerb. khim. zhur. no.1 '62. (MIRA 15:4)

1. Institut neftekhimicheskikh protsessov AN AzerSSR.

L 15185-66 EWT(l)/EWT(m)/EWP(w)/EWA(d)/T/EWP(t)/EWP(z)/EWP(b) IJP(c) JD/HW/JG

ACC NR: AP6002672 SOURCE CODE: UR/0126/65/020/006/0939/0942

AUTHOR: Shur, Ya. S.; Mishin, D. D.; Dunayev, F. N.; Pleshchev, V. G.

ORG: Ural State University (Ural'skiy gosuniversitet im. A. M. Gor'kogo)

TITLE: Temperature-induced magnetic hysteresis in the high-coercivity alloy Co-Pt

SOURCE: Fizika metallov i metallovedeniye, v. 20, no. 6, 1965, 939-942

TOPIC TAGS: magnetic hysteresis, magnetic coercive force, temperature dependence, cobalt containing alloy, platinum containing alloy, magnetic structure

ABSTRACT: Cyclic variation in the temperature of a ferromagnetic present in a weak magnetic field (compared with the magnitude of the coercive force) leads to an irreversible change in the extent of its magnetization. This phenomenon is termed temperature-induced magnetic hysteresis (TMH) and is due to the attendant reorganization of domain structure. If the type of domain structure changes along with the temperature, irreversible processes of the displacement of domain walls also occur; it is this that leads to TMH. It appears that marked inhomogeneities of magnetic structure, reflecting the heterogeneity of crystalline structure, should exist in the alloy Co-Pt when in high-coercive state: roughly an half of the alloy's volume is occupied by fine-disperse particles (30-50 Å) of the ordered phase separated by the disordered phase. This alloy displays a sharp temperature dependence of the ani-

Card 1/3 UDC: 538.221:23

L 15185-66
ACC NR: AP6002672

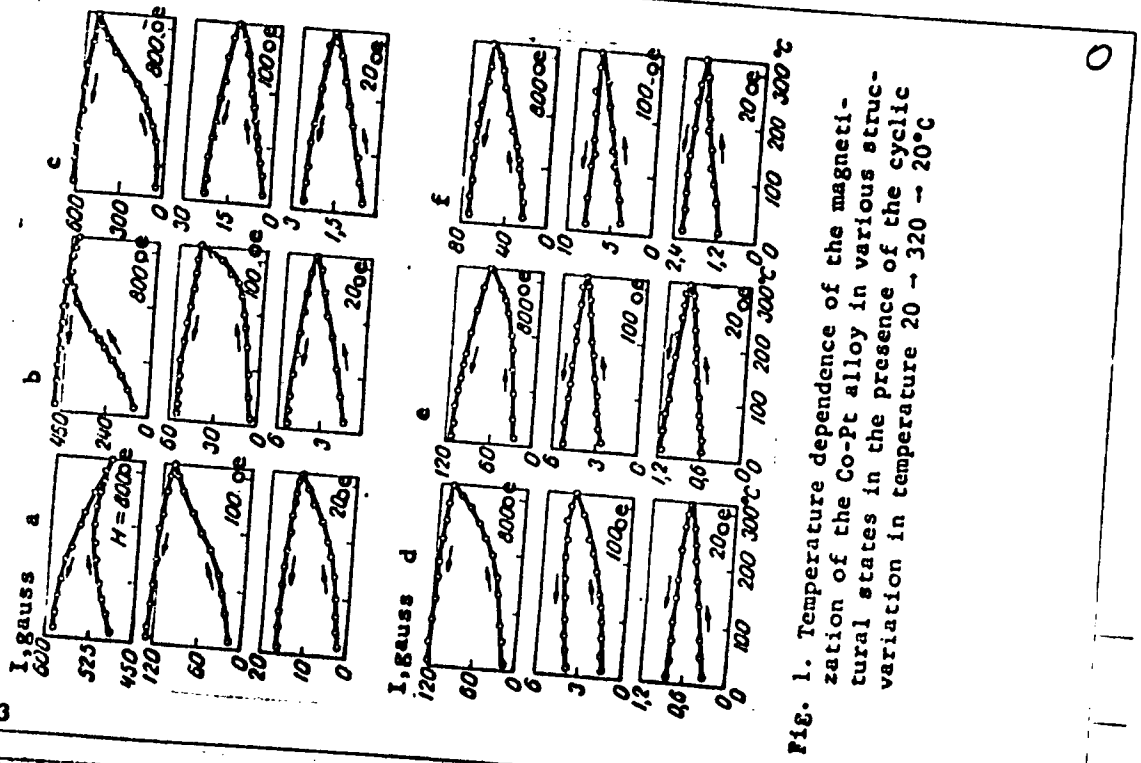


Fig. 1. Temperature dependence of the magnetization of the Co-Pt alloy in various structural states in the presence of the cyclic variation in temperature 20 → 320 → 20°C

Card 2/3

L 15185-66
ACC NR: AP6002672

sotropy constant, which also should lead to a change in magnetic structure. Hence it may be assumed that such an alloy must display a marked TMH. To verify this assumption cylindrical (length 2 cm, diameter 0.45 cm) specimens of Co-Pt alloy of equiatomic composition were subjected to various types of heat treatment (quenching from 1000°C at 1.7 deg/sec, with or without tempering at 600 or 700°C for from 20 min to 3.5 hr). Observations of the course of magnetization in the presence of cyclic changes in temperature from 20 to 320°C and from 20 to 520°C (above Curie point) were performed by the magnetometric method, with the specimens placed in magnetic fields of 20, 100, 200, 400 and 800 oe. All the specimens displayed high values of TMH, as illustrated, e.g. by Fig. 1. The markedly inhomogeneous magnetic structure in the high-coercivity Co-Pt alloy is present because the ordered-phase particles with a high anisotropy constant K are oriented in the easy directions. At the same time in the disordered phase with low K the spins will deviate from the easy directions and be aligned so as to reduce the density of magnetic charges within the ferromagnetic. With variation in temperature, due to the strong temperature dependence of the ordered-phase K, the type of magnetic structure is altered. If this alteration occurs in the presence of an external field, processes leading to the growth of resultant magnetization will chiefly occur. These processes may be reversible or irreversible; it is the latter that lead to TMH. Orig. art. has: 1 table, 4 figures.

SUB CODE: 11, 20/ SUBM DATE: 22Feb65/ ORIG REF: 005/ OTH REF: 001

Card 3/3 vmb

L 24178-66 EWT(m)/EWA(d)/EWP(t) IJP(c) MJW/JD

ACC NR: AR6005235 SOURCE CODE: UR/0058/65/000/009/E131/E131

63
B

AUTHOR: Mishin, D. D.

TITLE: Influence of temperature gradients on the kinetics of heat-treatment processes and on the magnetic permeability of 79NM permalloy

SOURCE: Ref. zh. Fizika, Abs. 9E1086

REF SOURCE: Sb. Fiz. magnitn. yavleniy. Sverdlovsk, 1964, 107-108

TOPIC TAGS: temperature dependence, heat treatment, permalloy, magnetic permeability, electric resistance/ 79NM permalloy, 400Kh5Kh permalloy

TRANSLATION: A study was made of the influence of temperature gradients (TG) on the electric resistance R and the magnetic permeability μ of the permalloy 400Kh5Kh. R was measured with a potentiometer, and μ by a ballistic method. The TG were produced by heating the samples in vacuum ovens at different heating rates. Measurements of R have shown that the presence of annealing proceeds essentially only during the time of heating, when TG occur in the sample. The influence of the soaking time on μ is attributed to the duration of the heating of the multilayer toroidal samples. At large TG the values of μ reach just as large values as for small TG. The rate of heat treatment increases with increasing TG in the sample. The permeability μ follows uniquely the course of R: The smaller the increment of R, the larger the maximum value of μ during the heat treatment process. N. Smol'kov.

SUB CODE: 20

Card 1/1

L 24175-66 EWP(e)/EWT(m)/EWA(d)/EWP(t) IJP(c) JD

ACC NR: AR6005234 SOURCE CODE: UR/0058/65/000/009/E131/E131

AUTHORS: Mishin, D. D.; Khrabrov, V. A.

TITLE: Investigation of the temperature stabilization of the magnetic permeability of 79 NM permalloy

SOURCE: Ref. zh. Fizika, Abs. 9E1085

REF. SOURCE: Sb. Fiz. magnitn. yavleniy. Sverdlovsk, 1964, 109-111

TOPIC TAGS: magnetic permeability, permalloy, magnetic domain boundary, thermal stability, resistivity, electron mobility, heat treatment/79 NM permalloy

TRANSLATION: The authors investigated the influence of aging on the electric resistivity R_T and the differential magnetic permeability M_{dif} of toroidal samples prepared from a tape of permalloy 0.008 cm thick. The samples were subjected to different heat treatment (HT): heating for three minutes to 800 (1), to 1000 (2), and to 1100C (3) and heating for 120 minutes to 1100C (4). The aging consisted of

Card 1/2

L 24175-66
ACC NR: AR6005234

soaking for 60 minutes, and the cooling was at a rate of 200C/hr. The value of R_T was measured at 445C, and M_{dif} in the region T = 100 -- 300C in an atmosphere of argon. It was established that $\Delta R/R_T$ increases with the soaking time during aging. From a comparison of the curves of the dependence $M_{dif}T^{o}$ C/$M_{dif}20^{o}$ C. It is seen that the greatest temperature stability of magnetic permeability is possessed by sample 1, for which $\Delta R/R_T$ has the largest value. The presence of a definite regular connection between the variation of R_T during the aging process and the temperature stability of the permeability of permalloy is established. This connection is attributed to the existence of a connection between the shift of the domain boundaries and the mobility of the conduction electrons following a change in the permalloy temperature. N. Smol'kov.

SUB CODE: 20

Card 2/2

L 23813-66 EWT(m)/EWA(d)/EWP(t) IJP(c) MJW/JD

ACC NR: AR6005238 SOURCE CODE: UR/0058/65/000/009/E134/E134

AUTHOR: Mishin, D. D.; Kalyagina, L. A.

TITLE: Study of the spectra of magnetic induction of 79NM permalloy

SOURCE: Ref. zh. Fizika, Abs. 9E1106

REF SOURCE: Sb. Fiz. magnitn. yavleniy, Sverdlovsk, 1964, 112-117

TOPIC TAGS: permalloy, magnetic induction, spectrum analysis, temperature dependence, heat treatment

TRANSLATION: A study was made of the influence of the temperature t, the frequency ω of the remagnetizing field H, and of stabilizing heat treatment (HT) on the spectra of the magnetic induction B of 79NM permalloy. The spectra were investigated after HT in argon in accordance with the following schedule: heating to 1200C for 10 minutes, soaking 30 minutes, and cooling at a rate of 800C per hour. In addition, the samples were subjected to additional stabilizing treatment (aging) for 24 hours at 450C. It is established that the relative value of the higher harmonics increases with increasing field amplitude H. The third harmonic in fields 0.1 oe reaches 30% of the first. It is shown that the magnetization curve of permalloy can be represented as a sum of the first, third, and fifth harmonics. With increasing frequency ω of the field H to 1000 cps, the role of the higher harmonics decreases markedly. N. Mol'kov.

SUB CODE: 20

Card 1/1

L 24174-66 EWT(d)/EWT(l)/EWP(e)/EWT(m)/EWP(w)/EPF(n)-2/EWA(d)/T/EWP(t)
ACC NR: AR6005233 ~~IJP(c) JD/WW~~ SOURCE CODE: UR/0058/65/000/009/E130/E131

AUTHOR: Mishin, D. D.; Petrova, N. A.

TITLE: Temperature dependence of the magnetic properties of 79NM permalloy

SOURCE: Ref. zh. Fizika, Abs. 9E1084

REF SOURCE: Sb. Fiz. magnitn. yavleniy. Sverdlovsk. 1964, 118-120

TOPIC TAGS: temperature dependence, permalloy, magnetic permeability, magnetic induction, magnetic saturation, magnetic coercive force, heat treatment, magnetostriction/ 79NM permalloy

TRANSLATION: A study is made of the influence of the temperature t on the magnetic permeability μ, the saturation induction B_s, the remanent induction B_r, and the coercive force H_c of high-permeability 79NM permalloy. Toroidal samples were first subjected to high temperature heat treatment (HT) in vacuum at 1100C with subsequent cooling at a rate of 180C per hour to 600C, and then together with the furnace. The low temperature HT, i.e., aging, was in argon at 445C for 10 hours. It is established that after the first HT μ depends strongly on t and has a maximum near 100C. After aging, the temperature dependence of μ in the region 150--300C is stronger, and at -196 to 100C it is weaker. After aging, B_s increases and changes its temperature dependence, especially in the region of low temperatures. At -196C, B_s increases by 25% after aging. After aging, H_c greatly decreases in the region of low temeprature, this being attributed to a decrease in the magnetostriction λ and the stress σ. The

Card 1/2

L 24174-66

ACC NR: AR6005233 O

same causes explain the increase of μ. The increase of B_r after aging is attributed to the occurrence of a magnetic texture. M. Smol'kov.

SUB CODE: 20

Card 2/2 FV

L 02358-67 EWT(m)/EWP(t)/ETI IJP(c) JD/HW

ACC NR: AR6028435 SOURCE CODE: UR/0137/66/000/005/I029/I029

AUTHOR: Mishin, D. D.; Shmel'kov, A. P.

TITLE: Effect of depth on the coercive force of thin nickel films

SOURCE: Ref. zh. Metallurgiya, Abs. 51104

REF SOURCE: Uch. zap. Ural'skogo un-ta. Ser. fiz. vyp. 1, 1965, 101-102

TOPIC TAGS: nickel film, thin nickel film, thin magnetic film

ABSTRACT: Nickel films were deposited in a vacuum of 10^{-4} mm Hg from an alundum crucible with a W-heater. To increase the internal stresses in films, the spraying was done on a cold glass pad at maximum speed. The spraying time was 0.5—4 m sec, depending on the thickness. Prior to measuring the coercive force (H_c), the film was magnetized with an electromagnet in a field of 10000 erg. At a depth of about 700 Å, H_c is maximal; above or below this depth, H_c decreases. At a depth of about 2000 Å, the dependence of H_c on film depth becomes insignificant. At 700 Å, the decrease in H_c is explained by thermal fluctuations in the intensity of magnetization and incoherence in the rotation of magnetic spin moments. V. Olenicheva. [Translation of abstract].

Card 1/1 SUB CODE: 20/ UDC: 669.24:539.216.2:538.114

[illegible] (m)/[illegible](t) [illegible] (c) JD

ACC NR: AR6005793 SOURCE CODE: UR/0058/66/000/007/E110/E110

AUTHOR: Mishin, D. D.; Novikov, V. F.; Kalinin, V. M.

TITLE: The coercive force of plastically deformed ferrosilicon crystals

SOURCE: Ref. zh. Fizika, Abs. 7E630

REF SOURCE: Uch. zap. Ural'skogo un-ta. Ser. fiz., vyp. 1. 1965, 63-68

TOPIC TAGS: iron, silicon single crystal, plastic deformation, ferrosilicon, anistropy

ABSTRACT: The anisotropy of the coercive force H_c and the magneto-striction saturation λ_s of Fe-Si single crystals deformed by stretching in the direction [110] (110) was investigated. Research was conducted on disk-shaped samples. H_c measurements were made in three basic crystallographic directions on an astatic magnetometer with a 700-erg magnetizing field. Tensometric measurements were made of λ_s in fields of up to 1000 erg. Measurements showed that plastic deformation of Fe-Si single crystals in the direction [110] (110) causes a quantitative change in the H_c value and a qualitative change in the H_c anisotropy. The inequality of $H_{c[100]} < H_{c[111]} < H_{c[110]}$ is fulfilled in the 0--92% range. The inequality of $H_{c[001]} > H_{c[111]} > H_{c[110]}$ is fulfilled for

L 08927-67

ACC NR: AR6033793

9.2—23% deformation. When deformation exceeds 23%, the first correlation enters into effect. From the results of measurements, it follows that the process of change of H_c depends essentially on the direction of deformation. P. Khramov. [Translation of abstract]

SUB CODE: 08, 20/

ACC NR: AR6029499 SOURCE CODE: UR/0137/66/000/006/I026/I026

AUTHOR: Dunayev, F. N.; Mishin, D. D.; Gorduladze, A. L.

TITLE: Magnetostriction of a cobalt-platinum alloy

SOURCE: Ref. zh. Metallurgiya, Abs. 6I171

REF SOURCE: Uch. zap. Ural'skogo un-ta, Ser. fiz., vyp. 1, 1965, 81-85

TOPIC TAGS: magnetostriction, cobalt containing alloy, platinum containing alloy, ordered alloy

TRANSLATION: Changes of longitudinal $\lambda_{\parallel}$ and transverse $\lambda_{\perp}$ magnetostriction were studied in an equiatomic CoPt alloy at room temperature for quenched and cold worked samples with various amounts of compression, as well as for tempered samples. Measurements of the magnetostriction parallel to the rolling direction $\lambda_{\parallel}$ were positive, while $\lambda_{\perp}$ negative; $\lambda_{\parallel}$ and $\lambda_{\perp}$, measured perpendicular to the rolling direction, were positive and much lower in value than the magnetostrictive measurements along the rolling direction. Tempering of a sample led to a lowering of magnetostriction, and in overaged samples the magnetostriction changed sign. This change of magnetostrictive properties of an alloy could be explained by assuming that the unordered cubic phase of

Card 1/2 UDC: 669.255'231:538.22

ACC NR: AR6029499

the CoPt alloy has a large positive $\lambda_{\|}$, while the ordered tetragonal phase has a large negative magnetostriction. In samples deformed by rolling, a magnetic texture was formed in preference to an orientation of magnetization across the rolling. (From *RZh. Fiz.*).

SUB CODE: 11,13

Card 2/2

ACC NR: AR6029512 SOURCE CODE: UR/0137/66/000/006/I075/I075

AUTHOR: Mishin, D. D.; Boydenko, V. S.; Khadzhimuratov, A. Kh.

TITLE: Effect of heat treatment on the magnetic properties of cobalt [illegible]

SOURCE: Ref. zh. Metallurgiya, Abs. 6I532

REF SOURCE: Uch. zap. Ural'skogo un-ta. Ser. fiz., vyp. 1, 1965, 77-[illegible]

TOPIC TAGS: metal heat treatment, cobalt containing alloy, platinum containing alloy, magnetic property

TRANSLATION: A study was made of the effect of cooling rate from 1100°C to [illegible] and subsequent ordering at 600°C on the magnetic property $(BH)_{max}$ of a Co-Pt alloy close to the equiatomic composition. The study was conducted on samples of two compositions with a concentration of Co of 40 and 50 at %. The heat treatment was done in a vacuum of $1 \cdot 10^{-3}$ mm Hg. The magnetic properties were measured on a permeameter by the ballistic method. Regions of maximum quenching rate, were shown, for which further heat treatment guaranteed the highest magnetic properties of the alloys studied. On an alloy with 48 at % Co magnetic properties, close to the maximum obtainable, could be attained by cooling from 1000°C at a less than optimal rate, without a supplementary heat treatment. (Based on resumé).

SUB CODE: 11, 13

Card 1/1 UDC: 669.255'231.018.58

ACC NR: AP6029501 SOURCE CODE: UR/0137/66/000/006/I026/I026

AUTHOR: Mishin, D. D.; Durayev, F. N.; Shmel'kov, A. P.; Rodnevskiy, L. A.; Mityushev, V. A.; Kuranov, A. A.; Yevdokimova, L. A.

TITLE: Effect of plastic deformation and heat treatment on the magnetic anisotropy of a cobalt-platinum alloy

SOURCE: Ref. zh. Metallurgiya, Abs. 6I176

REF SOURCE: Uch. zap. Ural'skogo un-t [illegible] vyp. [illegible], [illegible]

TOPIC TAGS: plastic deformation, magnetic anisotropy, cobalt containing alloy, platinum containing alloy, ordered alloy

TRANSLATION: A study was [illegible] on the magnetic anisotropy of a Co-Pt alloy, having a nearly equiatomic [illegible]. From the curves of mechanical moments measured for [illegible] tions, it followed that with an increase [illegible] nition of magnetic biaxiality occurred, and an asymmetry of [illegible] grams was found relative to the axis of the angles. After [illegible] (heating to 1000°C and holding 3 hr and ordering [illegible] anisotropy almost disappeared. However, as evident in the [illegible] and magnetic energy diagrams, magnetic anisotropy was present after [illegible] cold rolled samples. (From *RZh. Fiz.*).

SUB CODE: 11

Card 1/1 UDC: 669.255'231:538.22

ACC NR: AR6033794 SOURCE CODE: UR/0058/66/000/007/E111/E111

AUTHOR: Mishin, D. D.; Shmel'kov, A. P.

TITLE: Effect of thickness on the coercive force of thin nickel films

SOURCE: Ref. zh. Fizika, Abs. 7E837

REF SOURCE: Uch. zap. Ural'skogo un-ta. Ser. fiz., vyp. 1, 1965, 101-102

TOPIC TAGS: nickel film, metal film, magnetic coercive force, magnetic moment, electron spin, coercive force, vacuum deposition

ABSTRACT: Nickel films were obtained by vacuum deposition (10^{-4} mm Hg). In order to increase internal stresses in the film, the spraying was made on a cold glass backing at the highest possible rate of 0.5—4 m/sec, depending on the thickness. Before the coercive force H_c was measured, the film was magnetized in an electromagnet in a field of 10,000-erg intensity with a field thickness of $\sim$700 Å, H_c is at a maximum. When the thickness is increased or decreased, H_c decreases. At thicknesses of 2000 Å, the dependence of H_c on the thickness of the film becomes negligible. With thicknesses below 700 Å, the decrease of H_c

Card 1/2

ACC NR: AR6033794

is explained by the heat fluctuations of magnetization and the noncoherence of rotation of spin magnetic moments. V. Olenicheva. [Translation of abstract] [GC]

SUB CODE: 11, 20, 09/

Card 2/2

ACC NR: AT7000886 SOURCE CODE: UR/0058/66/000/009/E115.1.1.5

AUTHOR: Dunayev, F. N.; Mishin, D. D.; Novikov, V. F.

TITLE: Effect of plastic deformation and low-temperature annealing on magnetostriction and coercive force of iron silicide monocrystals

SOURCE: Ref. zh. Fizika, Abs. 9E914

REF SOURCE: Uch. zap. Ural'skogo un-ta. Ser. fiz., vyp. 1, 1965, 55-61

TOPIC TAGS: plastic deformation, magnetostriction, low temperature annealing, coercive force, iron silicide, magnetism

ABSTRACT: A study was made of the effect of plastic deformation [illegible] low-temperature annealing on the magnetostriction and coercive force [illegible] theory has on tensile tests along crystallographic axes [illegible] The purpose of the study was to determine the regularities in the [illegible] characteristics under various degrees of deformation, the nature of the [illegible] tion of internal stresses, and the magnetic texture in those deformations [illegible] subsequent annealing. The experiments showed that the character of the change in the magnetostrictive force with increase in deformation is nonmonotonic, which

Card 1/2

ACC NR: AR7000886

... possibly explained by a change in the character of the anisotropy of the annealing stresses. At 150C, magnetostriction $\lambda_s^{(100)}$ and coercive force $H_c^{(100)}$ decrease with an increase in annealing time, whereas $\lambda_s^{(111)}$ and $H_c^{(111)}$ increase, which can possibly be explained by the decrease in internal stresses and the anisotropy of these stresses during annealing. V. Malakhov. [Translation of abstract] [SP]

SUB CODE: 20/

Card 2/2

ACC NR: AP7003903 SOURCE CODE: GE/0030/67/019/001/K001/K003

AUTHOR: Mishin, D. D.; Gretchishkin, R. M.

ORG: Ural State University, Sverdlovsk

TITLE: Electron microscope examination of high-coercive cobalt-platinum alloys

SOURCE: Physica status solidi, v. 19, no. 1, 1967, K1-K3 and appropriate inserts following p. 451

TOPIC TAGS: magnetic coercive force, cobalt containing alloy, platinum containing alloy, cobalt platinum alloy, PHASE COMPOSITION, ELECTRON MICROSCOPY

ABSTRACT: A study was made of the coercive force and microstructure of various heat-treated cobalt-platinum alloys of equiatomic composition. It is known (U. D. Tyapkin and K. M. Yamaleyev, Dokl. Akad. Nauk SSSR, 155, 1370, 1964) that after proper heat treating for obtaining a high-coercive force, the cobalt-platinum alloy consists of two phases: a disordered face-centered cubic phase and an ordered face-centered tetragonal phase. For investigating the kinetics of the order-disorder reactions, the microstructure of cobalt-platinum

Card 1/2

ACC NR: AP7003903

specimens was analyzed by an electron microscope after various types of heat treating and the coercive force of the specimens was measured simultaneously. Typical micrographs of three cobalt-platinum alloys are shown in the original article. Measurements of the magnetization of cobalt-platinum alloys as a function of temperature (D. D. Mishin, I. S. Shur, and V. I. Timostshuk, Fiz. Metallov i Metallovedenie, 19, 793, 1965) confirm the significant role of the magnetocrystalline energy in these alloys. It is suggested that the correlation between the coercive force and the size of the ordered phase regions, established in this paper must be taken into consideration in the further development of the theory of the high-coercive state of cobalt-platinum alloys. Orig. art. has: 3 figures. [NT]

SUB CODE: 20,11/SUBM DATE: 14Nov66/ORIG REF: 004/OTH REF: 004/

Card 2/2

MISHIN, D.F., dots.; SUKHOCHEV, K.I., assistent (Kuybyshev, Yaroslavskaya ul., d.34, kv. 1)

Surgical treatment of gall bladder fistula. Vest.khir. 82 no.2: 102-104 F '59. (MIRA 12:2)

1. Iz gospital'noy khirurgicheskoy kliniki (zav. - prof. A.M. Aminev) Kuybyshevskogo meditsinskogo instituta.
(GALL BLADDER, fistula
surg., technic (Rus))

LAVRINENKO, M.D.; MISHIN, D.S.; GRIGOROV, V.P.; PUNTUSOV, A.P.

Concerning A.I. Karabin's article "Are terminal compressor coolers necessary?" Prom. energ. 18 no.6:42-44 Je '63. (MIRA 16:7)

1. Dnepropetrovskiy chugunoval'tsedelatel'nyy zavod (for Lavrinenko). 2. Zavod "Energomash" (for all except Lavrinenko) (Compressors) (Karabin, A.I.)

VAYNSHTEYN, G.; YELISEYEV, V.; SHALONKIN, B.; KASUMOV, K.; OZEROV, I.
ZHADAN, Ye.; MANUYLOV, V.; MISHIN, F.

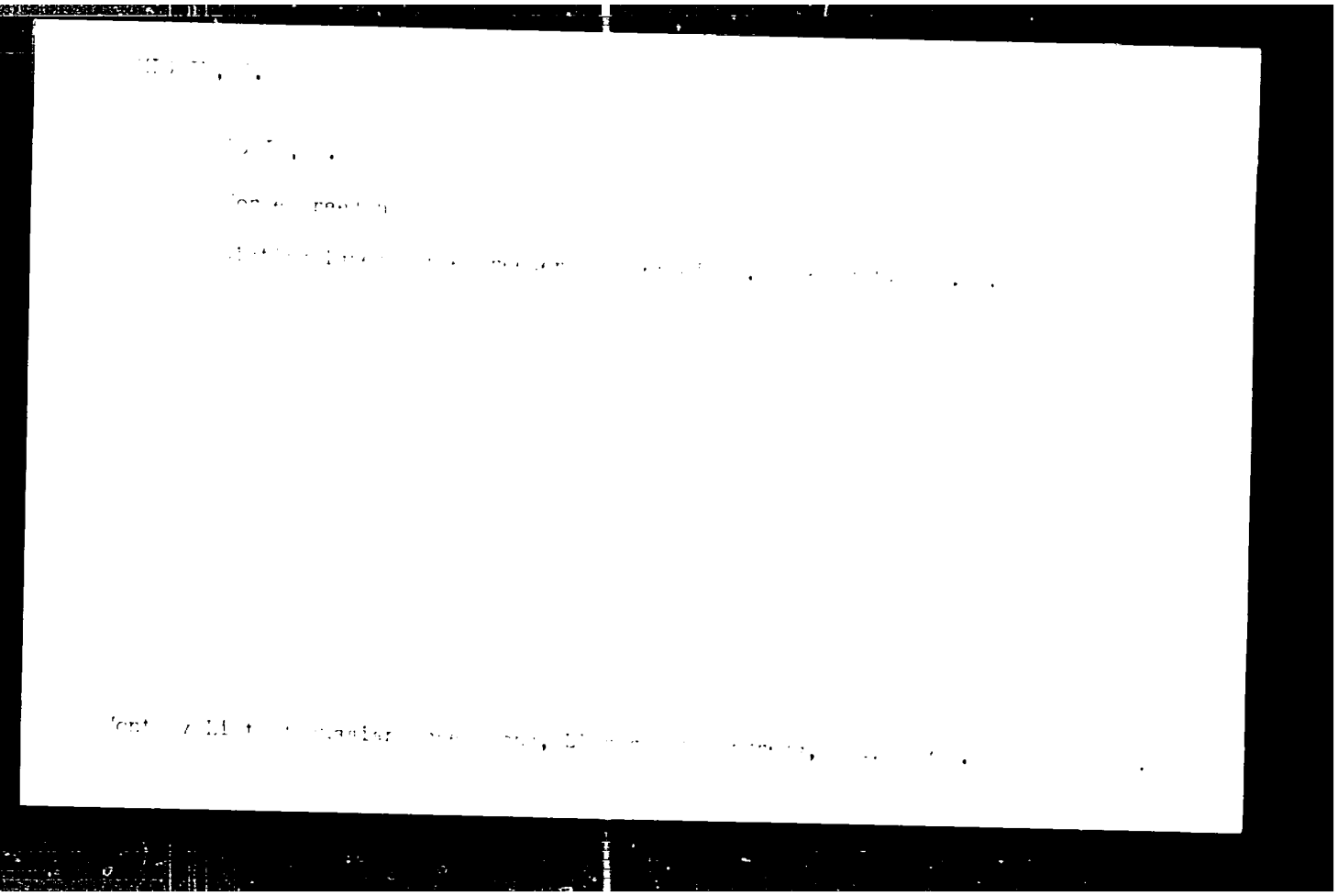
Foremost workers taking part in the socialist competition.
Avt.transp. 35 no.9:32-33 S '57. (MIRA 10:10)
(Automobile drivers) (Highway transport workers)

MISHIN, F.

Use all your abilities. Avt.transp. 37 no.11:6-8 N '59.
(MIRA 13:2)
(Uzbekistan--Transportation, Automotive)

MISHIN, F.

A united and solid team. Avt.transp. 38 no.7: [illegible] '60.
(MIRA 13:7)
(Frunze—Transportation, Automotive)



PENIONZHKEVICH, E.E., prof., doktor biolog.nauk; MISHIN, G.A.

Hereditary changes in White Leghorns produced by injection of blood from gray guinea hens. Ptitsevodstvo 9 no.8:32-33 Ag '59. (MIRA 12:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut ptitsevodstva.
(Poultry breeding) (Blood--Transfusion)

CARD 1 / 2 PA - 1854

SUBJECT USSR / PHYSICS
AUTHOR LUN'KIN, JU.P., MIŚIN, G.I
TITLE On the Luminescence of the Front of a Shock Wave.
PERIODICAL Žurn.eksp.i teor.fiz.31, fasc.6, 1109-1110 (1956)
Issued: 1 / 1957

In the course of experiments carried out on a ballistic device a luminescence of the front of the shock wave was observed in several gases J.ECKERMAN, R.SCHWARTZ, Phys.Rev., A.87, 912 (1952) although the temperature behind the shock wave in a multiatomic gas did not suffice for the excitation of luminescence. The following hypothesis may serve to explain this phenomena:

On the occasion of a collision of the molecules on the front of the shock wave, the energy of the directed motion goes over into the subordinated thermal energy. The computations carried out by C.ZENER (Phys.Rev.37, 556 (1931)) showed that after about 10 collisions a MAXWELL velocity distribution of molecules occurs, whereas the rotation- and oscillation degrees of freedom are practically left without excitation ("frozen-in"). On this occasion the entire energy goes over only to the degrees of motion of the progressing motion, and the local temperature of a gas becomes much higher than the temperature of the equilibrium established in the course of events.

After the degrees of freedom of the progressing motion the electron levels and the degrees of freedom of rotation are excited. According to the individual properties of the molecules, at first the electron levels, and then the degrees

of freedom of rotation, or else both together can be excited In either case local temperature remains higher than equilibrium temperature It is just by this energy distribution which does not correspond to equilibrium, that the observed luminescence can be explained, overmore as it is the f r o n t of the shock wave that is luminescent, where the degrees of freedom of oscillation are not yet excited in view of the fact, that for their excitation from 10^4 to 10^5 shocks are necessary

Further excitation of the degrees of freedom of rotation and oscillation leads to a decrease of gas temperature. which then tends towards equilibrium temperature and to an extinction of the luminescence The more rapidly the interior degrees of freedom are excited on this occasion, the narrower will be the zone of luminescence. In gases with multiatomic molecules the domain of luminescence will therefore be narrower than in monoatomic gases, where temperature drop is due only to a decrease of luminescence

The above is a translation of this short report.

INSTITUTION: Physical-Technical Institute of the Academy of Science in the USSR.

SOV/129-59-2-33/40

AUTHORS: Dunayev, Yu. A., Mishin, G. I. (Leningrad)

TITLE: A Ballistic Tube for Determination of the Drag Coefficient in a Free Flight (Ballisticheskaya truba dlya izmereniya koeffitsiyentov soprotivleniya tel v svobodnom polete)

PERIODICAL: Izvestiya Akademii nauk SSSR OTN, Mekhanika i mashinostroyeniye, 1959, Nr 2, pp 188-190 (USSR)

ABSTRACT: The author describes a ballistic tube for the investigation of flying bodies. It provides the possibility of determination of the drag coefficient with simultaneous photographing of the spectra of the gas flow around the body. The apparatus is illustrated in Figs 1 and 2: the high initial velocity of a flying body is obtained by shooting it from a rifle 1 (calibre 14.5 mm). The retardation of the sound waves of the firing is obtained in the vacuum container 2 (1 mm pressure) which is controlled by the pump 3 and the manometer 4. The flying body has a spherical shape of 9.4 mm dia. Both ends, i.e. inlet and outlet, of the container are covered with a cellophane sheet 0.04 mm thick. The ballistic tube 5, 4 m long and 300 mm dia, is divided into four sections. Three sections have two windows each, size 720 x 100 mm, placed opposite each other and two flanges of 150 mm dia. The latter are included in the apparatus for fixing pumps, manometers,

Card 1/4

A Ballistic Tube for Determination of the Drag Coefficient in a Free Flight

vacuum-meters and for the supply of gas. The sector 6 and the vacuum container 7 serve as air excluders from the surface of the flying body. The pressure is measured with the vacuum-meter 9 . The gas is contained in the bottle 10 and its pressure and temperature are measured with the manometer 11 and the thermometer 12. Prior to the experiments, the pressure in the tube is brought to 10^{-2} mm. The trigger is released by the electric current controlled by the relay 26 and the panel 24 . The photographs are taken through the windows 13 with the camera 14 (the exposure of 0.5×10^{-6} sec was obtained with the camera" " The lighting system 15 to 18 is obtained from a series of impulses producing flashes in the arrangement 21-23 . The flash circuit is shown in Fig 3, where a - signal from the photocell 23 , v - trigger, z - generator, - cascade, e - frequency divider, h - univibrator). The drag coefficient of the

Card 2/4

A Ballistic Tube for Determination of the Drag Coefficient in a Free Flight

flying body is determined by the expression

$$C_x = \frac{8ma}{\rho u^2 \pi d^2}$$

where m - mass of the sphere, a - delay, ρ - density of gas, u - velocity of the sphere, d - diameter of the sphere. Time is not considered in this expression due to $u \sim t^{-1}$, and $a \sim t^{-2}$. Knowing the gas pressure p and its temperature T in the tube, the density can be calculated from the formula $\rho = 0.3594 \rho_0 \frac{P}{T}$, where ρ_0 - density of gas at the temperature $0^\circ C$ and pressure 760 mm. The results of the measurements of C_x in the air at the atmospheric pressure are shown in Fig 4. The flying sphere in this case had the following parameters: M - 2.4 - 6.1,

AUTHOR: [illegible] 24/40

A Ballistic Tube for Determination of the Drag Coefficient in a Free Flight

R - 5.0×10^5 to 1.0×10^7. Thanks are given to A. A. Sokolov for his help in the experiment. There are 4 figures and 4 English references.

ASSOCIATION: Fiziko-tekhnicheskiy institut Akademii nauk SSSR (Physical Technical Institute of Academy of Sciences USSR)

SUBMITTED: November 5, 1956.

Card 4/4